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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/679,882	10/05/2000	Hisanori Nakajima	Q61079	7624

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EXAMINER	
PHAM, THIERRY L	

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 03/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/679,882	NAKAJIMA ET AL.	
	Examiner	Art Unit	
	Thierry L. Pham	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,9,11-20 and 40-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,9,11-20,40 and 41* is/are rejected.

7)☒ Claim(s) *42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

- This action is responsive to the following communication: an Amendment filed on 12/21/05.
- Claims 1, 6, 9, 11-20, and 40-42 are pending.
- A request to correct inventorship filed on 7/20/05 has been received and acknowledged.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 6, 9, 11, and 40-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kageyama et al (US 5954436), and in view of Sato (US 6065397).

Regarding claim 1, Kageyama discloses a printer control unit (printer controller, fig. 1) for issuing a command to a printer that is able to perform double-side printing (double-side printing, fig. 1), comprising:

- mode designation receiving means (printer controller receives printing commands from host computer, fig. 1) for receiving the designation of double-side printing mode (single/double side printing mode from host computer, fig. 1) in which both surfaces of a printing medium are targeted to be printed;
- command generating means (command processing unit, fig. 1) for generating a feed command of feeding the printing medium, in the case where said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later (second-half page is printed when the waiting time is released, col. 2, lines 65-67 to col. 3, lines 1-10) out of a pair of images to be printed on both surfaces of said printing medium; and
- command issuing means (command processing unit, fig. 1) for issuing said feed command (determine when to print the second-half page (i.e. double-side printing), col. 3, lines 1-10 and

col. 7, lines 15-25) generated by said command generating means as said command to be supplied to said printer.

Kageyama fails to expressly teach and/or suggest a command generating means for generating a feed command for correcting the timing of feeding the printing medium.

Sato, in the same field of endeavor for printing, teaches a command generating means for generating a feed command for correcting the timing of feeding the printing medium (printer control unit 15 of fig. 9 issues a feed command for correcting the timing of feeding the printing medium 13, col. 11, lines 30-50 and col. 13, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer control unit of Kageyama to include a command generating means for generating a feed command for correcting the timing of feeding the printing medium as taught by Sato because of a following reason: (•) adjusting feed timing based upon type of print media helps reduce powers and costs (Kato, col. 8, lines 55-65); (•) adjusting feed timing to allow print inks to dry before rotate the print media for reverse printing; thereby, reducing image bleeding and to assure excellent print quality.

Therefore, it would have been obvious to combine Kageyama with Sato to obtain the invention as specified in claim 1.

Regarding claim 6: Claim 6 recites limitations that are similar and in the same scope of invention as to claim 1 above except computer readable memory for storing computer programs. All computers/printers have some type of computer readable medium (i.e. RAM) for storing computer programs, hence claim 6 would be rejected using the same rationale as in claim 1.

Regarding claim 9, Sato further teaches wherein said program makes said printer control unit generate a command for rotating a registering roller (registration roller 16, fig. 7) and a feeding roller (feeding roller, col. 11, lines 40-50) at a rotational speed in accordance with a type of said printing medium (col. 11, lines 30-50) as a feed command for feeding said printing medium for printing said second image.

Regarding claim 11, Kageyama discloses a printer control unit (printer controller, fig. 1) for issuing a command to a printer that is able to perform double-side printing (double-side printing, fig. 1), comprising:

- mode designation receiving means (printer controller receives printing commands from host computer, fig. 1) for receiving the designation of double-side printing mode (single/double side printing mode from host computer, fig. 1) in which both surfaces of a printing medium are targeted to be printed;
- command generating means (command processing unit, fig. 1) for generating a feed command of feeding the printing medium, in the case where said mode designation receiving means receives the designation of double-side printing mode, for printing a second image that is to be printed later (second-half page is printed when the waiting time is released, col. 2, lines 65-67 to col. 3, lines 1-10) out of a pair of images to be printed on both surfaces of said printing medium; and
- command issuing means (command processing unit, fig. 1) for issuing said feed command (determine when to print the second-half page (i.e. double-side printing), col. 3, lines 1-10 and col. 7, lines 15-25) generated by said command generating means as said command to be supplied to said printer.

Kageyama fails to expressly teach and/or suggest a command generating means for generating a feed command for delaying the start of feeding of the printing medium.

Sato, in the same field of endeavor for printing, teaches a command generating means for generating a feed command for correcting the timing of feeding the printing medium (printer control unit 15 of fig. 9 issues a feed command for correcting the timing of feeding the printing medium 13, col. 11, lines 30-50 and col. 13, lines 10-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify printer control unit of Kageyama to include a command generating means for generating a feed command for correcting the timing of feeding the printing medium as taught by Sato because of a following reason: (•) adjusting feed timing based upon type of print media helps reduce powers and costs (Kato, col. 8, lines 55-65); (•) adjusting feed timing to allow print inks to dry before rotate the print media for reverse printing; thereby, reducing image bleeding and to assure excellent print quality.

Therefore, it would have been obvious to combine Kageyama with Sato to obtain the invention as specified in claim 11.

Regarding claims 40-41, Sato further teaches the print control unit according to claim 1, wherein correcting the timing of feeding reverse side of the printing medium comprises adjusting a timing lag (adjusting feed timing, col. 11, lines 20-50) for arriving to a print head of the printing medium having the first image already printed on front surface of the printing medium.

Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kageyama and Sato as applied to claim 11 above, and further in view of Inoue et al (US 6273535).

Regarding claim 12, Kageyama does not disclose wherein a printer control unit further comprising detection means for detecting information on the quantity of ink used for printing a first image which is to be printed ahead of the other one of said pair of images.

Inoue, in the same field of endeavor for printing, teaches a printer control unit further comprising detection means (sensing print conditions, figs. 5-9) for detecting information on the quantity of ink used (amount of ink used, fig. 5) for printing a first image which is to be printed ahead of the other one of said pair of images.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Kageyama as per teachings of Inoue because of a following reason: (•) to improve operating efficiency by delaying the start feeding the print medium for printing second image (e.g. reverse side) because it allows more time for inks to dry; by doing so, it allows bleeding of inks of an outputted image.

Therefore, it would have been obvious to combine Kageyama and Sato with Inoue to obtain the invention as specified in claim 12.

Regarding claim 13, Sato further teaches the printer control unit further comprising: printing condition storing means for storing information on waiting times (delay time, col. 11, lines 40-65) in correspondence with at least one of a type of printing medium (kind of paper, fig. 8) and a type of ink, wherein said command generating means reads the waiting time (delay time, col. 11, lines 40-65) corresponding to at least one of the type of printing medium (type of print

media, fig. 8) on which said second image is to be printed and the type of ink (type of inks used as taught by Inoue) used for printing the first image paring with said second image, from said printing condition storing means, and generates the command for delaying the start of feeding (delaying the start of feeding the printing medium, col. 11, lines 40-65) the printing medium for printing said second image as long as the period of time corresponds to said waiting time.

Regarding claims 14-15, Sato further teaches wherein said command generating means reduces the waiting time (col. 11, lines 40-65) before starting feeding the printing medium for printing said second image according to the time elapsed since printing of said first image is finished.

Regarding claims 16-20, Sato further teaches wherein said printer is a printer of a type which suspends advancement (col. 11, lines 40-65) of the printing medium, which is fed by the rotation of a feeding roller to a registering roller (registration roller 16, fig. 7) located forward of said printing medium, said command generating means incorporates an instruction for rotating said registering roller in the direction to move said printing medium backward and rotating said feeding roller according to the rotation of said registering roller, into the command for delaying the start of feeding (col. 11, lines 40-65) the printing medium for printing said second image.

Response to Arguments

Applicant's arguments filed 12/21/05 have been fully considered but they are not persuasive.

- Regarding claims 1, 6, 9, 11, 40-41, the applicants argued there is no motivation to combine the cited prior arts of record.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation for doing so: (•) adjusting feed timing based upon type of print media helps reduce powers and costs (Kato, col. 8, lines 55-65); (•) adjusting feed timing to allow print inks to dry before rotate the print media for reverse printing; thereby, reducing image bleeding and to assure excellent print quality.

Printer control unit 115 as shown in fig. 9 sends control signals (i.e. media feed timing) to stepper motor 102 (fig. 9) to delay paper feed timing based upon paper type (col. 11, lines 39-50). For example, delaying paper feed timing of thick paper as compared to plain paper (col. 11, lines 39-45) helps to reduce mechanical power consumption and wears between two types of media types. By reducing mechanical wears help eliminate costs.

• Regarding claims 1, 6, 9, 11, 40-41, the applicants argued the motivation as cited by the examiner is a creature of impermissible hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). It is well known in the art that during duplex printing of both sides (i.e. via ink jet printing), a print media must be reversed in order to print image data onto second side, during a reverse, the printed ink of the first side will be rubbed against the roller, therefore, it would have been obvious to wait for the printed inks to dry prior to perform second side printing, thereby, reducing image bleeding and to assure excellent print quality.

Applicant's arguments, see page 9, filed 12/21/05, with respect to claims 6, 9, and 41 have been fully considered and are persuasive. The U.S.C. §101 rejection of claims 6, 9, and 41 has been withdrawn.

Applicant's arguments, see page 9, filed 12/21/05, with respect to claim 9 have been fully considered and are persuasive. The U.S.C. §112, second paragraph rejection of claim 9 has been withdrawn.

Allowable Subject Matter

Claim 42 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 272-7439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham

GABRIEL GARCIA
PRIMARY EXAMINER